

## REMARKS

The applicants appreciate the Examiner's thorough examination of the Application and request reexamination and reconsideration of the Application in view of the following remarks.

The Examiner objects to Fig. 2 and suggests that blocks 60a and 60b should be labeled with the words "Echo Celler". Applicants herein submit a Replacement Drawing Sheet including Fig. 2 that includes the labels suggested by the Examiner. Applicants respectfully request that the Examiner withdraw this objection to the drawings.

Claims 1, 2, 3, and 25-30 stand rejected under 35 USC §102(e) as allegedly being anticipated by U.S. Patent No. 6,304,594 to Salinger.

The subject invention results from the realization that an improved communications system which can compensate for the unpredictable transfer function due to component mismatches and parasitic elements can be achieved with a calibration system which is responsive to an altered reference signal of the transmitter circuit to adjust the reference signal level of at least one of the transmitter and receiver circuits to compensate for variations in the transmission signal due to the transfer function of the transmission medium.

Salinger shows an interference detection and avoidance technique for automatically detecting the presence of an interfering signal in a data communications receiver and retuning the frequency of a transmitter to avoid the detected interfering signal. The interfering signal may include narrowband interference, such as radio signals, or wideband interference, which can be caused by electrical machinery, internal combustion engines or fluorescent lights. Referring to Fig. 2 of Salinger and column 6, line 60 to column 7, line

17, which the Examiner cites, at some time during system startup, switch 70 is closed and analog to digital converter 78 (shown as 76 in Fig. 2) samples the radio frequency interference, digitizes it and transmits it to computer 76 which performs a Fast Fourier Transform analysis using FFT 74. The output of FFT 74 is transmitted to reverse control channel 58 which controls transmitter controller 60, "which selects a new carrier frequency, symbol rate and constellation size that are adequate to carry the desired payload data rate while avoiding any [radio frequency interference] that may be present in the environment". See Salinger at column 7, lines 7-12.

Salinger does not teach, disclose or suggest a calibration system for a communication system that includes a calibration circuit responsive to a reference signal of a transmitter circuit which adjusts the reference signal level of one of the transmitter or receiver circuits to compensate for variations in the transmission signal due to the transfer function of the transmission medium, as claimed by Applicants. Rather than teaching that the reference signal level is adjusted to compensate for variations in the transmission signal, Salinger teaches that it is desirable to select a new carrier frequency and change to the new carrier frequency to avoid narrowband and wideband interference. Thus, Salinger actually teaches away from the subject invention as claimed.

In contrast to Salinger, the subject invention as claimed uses a calibration circuit responsive to a reference signal of the transmitter circuit to adjust the reference signal level of either the transmitter or receiver circuit to compensate for variations in the transmission signal. During a calibration cycle of communication system 10, transmitter circuit 12 sends a predefined signal through transmission medium 14. The predefined signal is altered when transmitter circuit 12 transmits the signal through transmission medium 14 before it is

received by receiver circuit 16. Calibration system 18 uses digital output 26 of receiver circuit 16 to adjust the reference signal level of either the transmitter or receiver circuit, such as reference signal level 28 which is supplied to receiver circuit 16. As such, calibration system 18 adjusts the reference signal level of either the transmitter or receiver circuits to compensate for the unpredictable gain of the transfer function of transmission medium 14.

Claim 1 of the subject application recites, "[a] calibration system for a communication system comprising a transmitter circuit; a receiver circuit; a transmission medium having a transfer function for transmitting a transmission signal between said transmitter and receiver circuits; and a calibration circuit responsive to an altered reference signal of said transmitter circuit altered by the transmission medium for adjusting the reference signal level of one of said transmitter and receiver circuits to compensate for variations in the transmission signal due to said transfer function." Salinger does not teach, disclose or suggest a calibration circuit responsive to a reference signal of the transmitter circuit for adjusting the reference signal level of either the transmitter or receiver circuits to compensate for variations in the transmission signal. Rather, Salinger teaches selecting a new carrier frequency to avoid any radio frequency interference that may be present in the environment.


Accordingly, claim 1 of the subject application is patentable over the prior art. Applicants respectfully request that the Examiner withdraw the rejections of claims 1, 2, 3 and 25-30 under 35 USC §102(e).

Claims 4-9 and 31-34 stand rejected under 35 USC §103(a) as allegedly being unpatentable over Salinger in view of U.S. Patent No. 6,434,199 to Desrosiers et al.

Applicants have clearly described above how claim 1 is patentable over Salinger. Since claims 4-9 and 31-34 each depend from claim 1, these claims are patentable for the reasons stated above and are further patentable since they include one or more additional features. Applicants respectfully request that the Examiner withdraw the rejection of claims 4-9 and 31-34 under 35 USC §103(a).

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned, or his associates, collect in Waltham, Massachusetts, at (781) 890-5678.

Respectfully submitted,

  
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Amendments to the Drawings:

The attached drawing sheet includes changes to Fig. 2. This sheet, which includes only Fig. 2, replaces the original drawing sheet including Fig. 2.

Attachment: Replacement Drawing Sheet